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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/730,463	12/05/2000	Werner Sievers	HOE97/F143	8152

7590 02/05/2004

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EXAMINER
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WYROZEBSKI LEE, KATARZYNA I

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 02/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/730,463

Applicant(s)

SIEVERS ET AL.

Examiner

Katarzyna Wyrozebski Lee

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9, 12, 13, 15, 16 and 20-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5, 6, 22, 25-28 is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-9, 12, 13, 15, 16, 20, 21, 23, 24, 29-36 is/are rejected.
- 7) ☒ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

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In view of applicant's arguments presented on 10/29/2003, following office action is final. The rejections of record are restated herein. Per applicant's amendment claims 10, 11, 14, 17-19 are cancelled claims 32-36 are added. Claims 1-9, 12, 13, 15, 16, 20-36 are pending. Claims 5, 6 and 22 are rewritten in independent form, which amendment does not change the scope of the claims. Newly added claims shadow claims 12, 13, 15, 16 and 24 and are directed towards surface coatings. In view of the amendment, 112 rejection of record is overcome.

***Claim Rejections - 35 USC § 102***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 3, 4, 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by HARMER (US 5,824,622).

The discussion of the disclosure of the prior art of HARMER from paragraph 4 of the office action mailed on 8/4/2003 is incorporated here by reference.

*Claim Rejections - 35 USC § 103*

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 2, 12, 13, 15, 16, 20, 2123, 24, 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over HARMER (US 5,824,622) in view of KOLOSKI (US 5,977,241).

The discussion of the disclosure of the prior art of HARMER and KOLOSKI from paragraph 8 of the office action mailed on 8/4/2003 is incorporated here by reference. Newly added claims requiring coating article are also rejected over the prior art of HARMER and KOLOSKI, since in col. 26, examples 9 of KOLOSKI use of composition as a coating is disclosed.

In the amendment filed on 10/29/2003 the applicants argued following:

a) The prior art of HARMER fails to disclose an organic-inorganic network on a scale of no more than 100 nm.

With respect to the above argument, the examiner disagrees. The prior art of HARMER clearly discloses network of porous silica having fluorinated polymer diffused into the silica component. The prior art of HARMER may not refer to it as interpenetrating network, and this is a basic definition of it. Secondary reference of KOLOSKI clearly supports examiner's allegation by stating that the organic and inorganic components co-exist within free volume, which include pores (col. 11, lines 37-42). With respect to the argument that the prior art of

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HARMER discloses the pore size of the inorganic silica as 0.5-75 nm (col. 1, lines 64-65). The prior art of HARMER only disclosed that the composition can have larger pores having size of 75-1000nm.

b) The prior art of HARMER fails to disclose process of making such materials.

With respect to the above argument, the examiner also disagrees. The process disclosed in most broad claims of the present invention require that the polymer and silicon oxide source be mixed in aqueous solution, then pH has to be changed to form a gel and then the gel is dried. As it was stated in the office action mailed on 8/4/2003, this are exactly the same steps taught by HARMER. The resin and source of silicon oxide are mixed in aqueous solution, the pH is changed with use of HCl and within 15 seconds gel is formed. Last but not least the gel is dried. The process of the prior art that includes steps which are claimed by the present invention is bound to produce the same product including its properties such as density.

c) The prior art of KOLOSKI discloses microcomposite similar to that of HARMER, having polymer entrapped within the solid matrix.

The examiner agrees.

d) The prior art of KOLOSKI discloses process of forming the microcomposite, which comprises polymerization of the infused molecules but does not disclose interpenetrating network.

With respect to the above argument, the prior art of KOLOSKI was utilized to provide for types of polymers that can form the composite and their use. It was not utilized for its process.

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Even if it did, the prior art of KOLOSKI clearly discloses that such composition can be made utilizing other methods. One of those methods is dissolving the inorganic and organic components in a solvent in which they are both miscible (col. 1, lines 43-46). So why it would not have been obvious to use polymers of KOLOSKI in the prior art of HARMER? Especially when they are both capable of forming similar product.

Applicant's arguments with respect to the combination of HARMER and GEISS is considered moot due to discontinuation of this rejection against present claims. The prior art of GEISS is withdrawn, since the particles of aerogel are pre-formed, before the mixing step with the polymeric component. The process of GEISS is not similar enough to the process of HARMER to sustain this rejection.

### *Claim Objections*

Claims 5, 6 and 22 are allowed as they have been rewritten in independent form.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

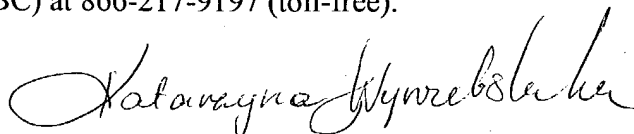
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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski Lee whose telephone number is (571) 272-1127. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Katarzyna Wyrozebski Lee  
Primary Examiner  
Art Unit 1714

kiwl  
February 2, 2004